STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0048712
Owner:	City of Knob Noster
Address:	218 North State Street, Knob Noster, MO 65336
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Knob Noster Wastewater Treatment Facility
Facility Address:	218 North State Street, Knob Noster, MO 65336
Legal Description:	NE ¼, NW ¼, Sec. 20, T46N, R24W, Johnson County
Latitude/Longitude:	Outfall #001 +3846047/-09335056, Outfall #002 +3846105/-09335114
Receiving Stream:	Unnamed Tributary to Clear Fork (U)
First Classified Stream and ID:	Clear Fork (P)(00935)
USGS Basin & Sub-watershed No.:	(10300104-040002)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 – POTW – SIC#4952
Single cell lagoon/sludge is retained in lagoon.
Design population equivalent is 6,610.
Design flow is 500,000 gallons per day.
Actual flow is 280,000 gallons per day.
Design sludge is 99 dry tons/year.

Outfall #002 – POTW – SIC#4952
Overland flow

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

February 8, 2002
Effective Date

Stephen M. Mahfood, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

February 7, 2007
Expiration Date

Interim Director of Staff, Clean Water Commission

MO 780-0041 (10-93)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Flow	MGD	*		*	once/month	24 hr. estimate
Biochemical Oxygen Demand$_5$**	mg/L		65	45	once/month	grab
Total Suspended Solids**	mg/L		80	60	once/month	grab
Ammonia	mg/L	*		*	once/month	grab
pH – Units	SU	***		***	once/month	grab
Outfall #002						
Flow	MGD	*		*	once/month	24 hr. estimate
Biochemical Oxygen Demand$_5$****	mg/L		45	30	once/month	grab
Total Suspended Solids****	mg/L		45	30	once/month	grab
pH - Units	SU	***		***	once/month	grab
In-stream monitoring						
Clear Creek at Hwy 50						
Dissolved oxygen*****	*				once/month	grab
Ammonia – N	*				once/month	grab
Clear Creek at SE, NE, Sec.19, T46N,R24W						
Dissolved Oxygen*****	*				once/month	grab
Ammonia – N	*				once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE March 28, 2002. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.
** This facility is required to meet a removal efficiency of 65% or more.
*** pH is measured in pH units and is not to be averaged. The pH is to be maintained at or above 6.0 pH units. (lagoons)
**** This facility is required to meet a removal efficiency of 85% or more.
***** Dissolved oxygen monitoring is only required in the months of May through October. Readings should be taken before 9 a.m.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.

3. Permittee will cease discharge by connection to areawide wastewater treatment system within 90 days of notice of its availability.

4. Changes in Discharges of Toxic Substances

   The permittee shall notify the Director as soon as it knows or has reason to believe:
   (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
      (1) One hundred micrograms per liter (100 µg/L);
      (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
      (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
      (4) The level established in Part A of the permit by the Director.
   (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

C. SPECIAL CONDITIONS (continued)

6. General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
   (a) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
   (b) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
   (c) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
   (d) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
   (e) There shall be no significant human health hazard from incidental contact with the water;
   (f) There shall be no acute toxicity to livestock or wildlife watering;
   (g) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
   (h) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities
   (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
   (b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids that are removed from the domestic wastewater treatment lagoon during lagoon clean-out and maintenance activities. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids from the lagoon. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

WATER QUALITY REVIEW SHEET

Facility Information

FACILITY NAME: Knob Noster WWTF NPDES/SOP #: MO0048712

FACILITY TYPE/DESCRIPTION: Lagoon, overland flow system

ECOREGION: C.I.P. 8- DIGIT HUC: 10300104 COUNTY: Johnson

Central Irregular Plains Osage Plains
Mississippi Alluvial Plains Ozark Highlands

LEGAL DESCRIPTION: NE,NW,S20, T46N,R24W LATITUDE/LONGITUDE: 36 46 04.7 93 35 05.6

WATER QUALITY HISTORY: This lagoon followed by an overland flow system has generally been well operated, with no recorded negative effects on the receiving stream. BOD/TSS effluent limits of "30/60"-mg/l (BOD/TSS) for the lagoon and "30/30" for the overland flow system have usually been met. As a facility with a design discharge of >0.3 MGD and which discharges to a low-flow classified stream, current policy requires assurance that in-stream dissolved oxygen and ammonia criteria are met. Natural upstream flow at critical low flow periods is probably minimal, because the discharge is near the beginning of the Class P (permanent flow) part of Clear Creek.

Outfall Characteristics

OUTFALL	DESIGN FLOW (CFS)	TREATMENT TYPE	RECEIVING WATERBODY	CLASS
001	0.75 (total)	Lagoon,	Clear Creek	P
002		Overland flow	Clear Creek	P

Receiving Waterbody Information

WATERBODY	CLASS	7Q10(CFS)	*DESIGNATED USES	OTHER CHARACTERISTICS
Clear Creek	P	~ 0	LWW, AQL	

*Cool Water Fishery (CLF), Cold Water Fishery (CDF), Irrigation (IRR), Industrial (IND), Boating & Canoeing (BTG), Drinking Water Supply (DWS), Whole Body Contact Recreation (WBC), Protection of Warmwater Aquatic Life and Human Health (AQL), Livestock & Wildlife Watering (LWW)

Permit Limits And Information

TMDL WATERSHED: (Y OR N) [N] W.L.A. STUDY CONDUCTED: (Y OR N) [N] DISINFECTION REQUIRED: (Y OR N) [N] DISINFECTION WAIVER: (Y, N, NA) [NA]

OUTFALL	EFFLUENT PARAMETER	WEEK. AVE.	MONTH. AVE.	COMMENTS
001	**BOD**	**65**	**45**	**10 CSR 20-7.015**
	NFR	**80**	**60**	**"**
002	**BOD**	**45**	**30**	**"**
	NFR	**45**	**30**	**"**

WET TEST (Y OR N): [N] FREQUENCY: - A.E.C. - LIMIT: INSIGNIFICANT MORTALITY

Water Monitoring Requirements (INTERIM)

SAMPLE LOCATION	PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION DESCRIPTION
001	NH3N	ONCE/MONTH	G	
002	NH3N	"	"	
Clear Cr.	NH3N	"	"	Hwy 50
"	d.o. *	"	"	"

* d.o. to be monitored May – Sept. , before 9 a.m.

Derivation and Discussion of Limits

Currently, the minimum upstream flow is considered to be 1.2 MGD (1.8 cfs), which is the average flow of Whiteman AFB's discharge; this well-treated eflfuent provides coninuous dilution of the Knob Noster effluent.

(1.8 cfs + 0.75 cfs)/ 0.75 cfs = 3.4 times dilution

NH3N criterion for a limited warm-water fishery at average pH, temp. = 2 mg/l

3.4 x 2 mg/l = **7.2 mg/l** of effluent NH3N should be met to assure meeting in-stream criteria.

Effluent and in-stream monitoring should be required in the renewed permit, which will help determine if the effluent NH3N target level and in-stream nh3n and dissolved-oxygen criteria are being met. It is also recommeneded that a 24-hour physical/chemical survey be conducted by DNR during a low-flow period in the summer of 2002 or 2003 to determine any effect on stream NH3N and dissolved oxygen due to the effluent. Depending on these results, a more restrictive BOD requirement in the future is possible, but is not anticipated. A 3-year permit period is recommended.

REVIEWER: RG DATE: 10-15-01 SECTION CHIEF: JM